

**IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE**

Appl. No. : 10/597,752
Applicant(s): Horst Greiner
Filed: August 7, 2006
TC/A.U.: 2800/2875
Examiner: Sean P. Gramling
Atty. Docket: DE 040041 US1
Confirmation No.: 5798
Title: LUMINOUS BODY

APPEAL BRIEF

Honorable Assistant Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In connection with the Notice of Appeal dated July 7, 2010, and the Notice of Panel Decision from Pre-Appeal Brief Review dated August 24, 2010, Applicant provides the following Appeal Brief in the above-captioned application.

1. Real Party in Interest

The real party in interest as assignee of the entire right and title to the invention described in the present application is Koninklijke Philips Electronics, N.V., having a principal place of business at Groenewoudseweg 1, Eindhoven, NL 5621 BA.

2. Related Appeals and Interferences

There are no known related appeals or interferences at this time.

3. Status of the Claims

Claims 1-12 are pending in this application, and are the subject of the present Appeal. Claims 1-12 are finally rejected, and are duplicated in the Appendix.

4. Status of the Amendments

A final Office Action on the merits was mailed on April 13, 2010 (hereinafter "Final Office Action"). A Notice of Appeal and Pre-Appeal Brief Request for Review were filed July 7, 2010. A Notice of Panel Decision from Pre-Appeal Brief Review was mailed on August 24, 2010, in which the Panel determined that Applicant should proceed to the Board of Patent Appeals and Interference with regard to claims 1-12. There are no pending amendments with respect to this application.

5. Summary of the Claimed Subject Matter¹

In accordance with a representative embodiment, as recited in claim 1, a luminous body includes a housing (FIG. 1, housing 10; p. 4, lines 24-25) with a light emission surface (FIGs. 1 and 2, light emission surface 4; p. 4, lines 32-33) and a plurality of light sources arranged in the housing (FIG. 1, light sources 2; p. 5, lines 4-14), wherein the

¹ In the description to follow, citations to various reference numerals, drawings and corresponding text in the specification are provided solely to comply with Patent Office Rules. It is emphasized that these reference numerals, drawings and text are representative in nature, and in not any way limiting of the true scope of the claims. It would therefore be improper to import any meaning into any of the claims simply on the basis of illustrative language that is provided here only under obligation to satisfy Patent Office rules for maintaining an Appeal.

housing includes at least a first optical medium (FIG. 1, optical waveguide plate 1; p. 4, lines 26-31) with a first optical scattering power (p. 4, lines 26-27), into which medium the light of the light sources is coupled; and a plurality of second optical medium elements (FIGs. 1 and 2, second optical media 5; p. 5, line 15 – p. 7, line 2) with a second optical scattering power (p. 5, lines 15-17; p. 6, lines 25-30) disposed in the housing, wherein each of the second optical medium elements includes a plurality of particles (FIG. 1; p. 5, line 33 – p. 6, line 8), and each of the second medium elements is disposed over a respective one of the light sources (FIG. 1; second optical media 5, light sources 2; FIG. 2, p. 7, lines 15-20).

Also, in accordance with another representative embodiment, as recited in claim 9, the light-scattering particles are globules with an optical refractive index different from that of the surrounding material (p. 5, line 33 - p. 6, line 2).

6. Grounds of Rejection to be Reviewed on Appeal

The issues in the present matter are whether:

- I. Claims 1 and 4-12 are properly rejected under 35 U.S.C. § 102(b) as being anticipated by *Koike, et al.* (U.S. Patent No. 6,345,903); and
- II. Claims 2 and 3 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over *Koike, et al.* in view of *Kawano, et al.* (U.S. Patent No. 6,404,131).

7. Argument

In this portion of the Appeal Brief, arguments are provided. Notably, wherever applicable, Applicant maintains previous arguments for patentability provided in responses to Office Actions.

I. Rejection under 35 U.S.C. § 102(b)

Claims 1 and 4-12 have been rejected under 35 U.S.C. § 102(b) as being anticipated by *Koike et al.*

A. Legal Standards

Applicant relies on at least on the following standards with regard to proper rejections under 35 U.S.C. § 102. Notably, anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. *See, e.g., In re Paulsen*, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990); *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir.1983). Alternatively, anticipation requires that each and every element of the claimed invention be embodied in a single prior art device or practice. *See, e.g., Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir.1992). For anticipation, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. *See, e.g., Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir.1991).

B. Final Office Action

1. Claim 1

Claim 1 is drawn to a luminous body and features:

a housing with a light emission surface and a plurality of light sources arranged in the housing, wherein the housing comprises: at least a first optical medium with a first optical scattering power, into which medium the light of the light sources is coupled; and
a plurality of second optical medium elements with a second optical scattering power disposed in the housing, wherein each of the second optical medium elements comprises a plurality of particles, and each of the second medium elements is disposed over a respective one of the light sources.

The Final Office Action asserts that “a plurality of light sources” is disclosed by light emitting diode elements 15; that “first optical medium” is disclosed by second resin encapsulator 27; and that “second optical medium” is disclosed by first resin encapsulator

25. See Final Office Action, p. 2 (citing *Koike, et al.*, FIGs. 2, 3 and 8; col. 4, line 53 – col. 6, line 13).

However, each first resin encapsulator 25 of *Koike, et al.* (assertedly the “second optical medium”) does not include “a plurality of particles,” as recited in claim 1. Rather, *Koike, et al.* discloses that the first resin encapsulator 25 includes a wavelength converting material, but not a plurality of particles:

[A] first resin encapsulator 25 for sealing the light emitting diode element 15 is charged into the reflection frame 21. A wavelength-converting material excited by blue luminescence or luminescent light to thereby generate visible light having a long wavelength is mixed into the first resin encapsulator 25. For example, it is capable of transforming the blue luminescence into white and emitting its light. As the wavelength-converting material, may be used a luminescent material comprised of a fluorescent dye, a fluorescent pigment or the like. As the fluorescent dye, may be used, for example, an organic phosphor such as fluorescein, rhodamine or the like. Also as the fluorescent pigment, may be used an inorganic phosphor such as calcium tungstate or the like.

See *Koike, et al.*, col. 5, lines 39- 48 (emphasis added).

Applicant respectfully submits that mere mention of a “wavelength-converting material,” such as a “luminescent material,” in the first resin encapsulator 25 does not disclose a second optical medium element comprising a plurality of particles, particularly to one of ordinary skill in the art, for purposes of rejection under 35 U.S.C. § 102(b). Rather, the first resin encapsulator 25 disclosed by *Koike, et al.* is merely dyed or pigmented with a fluorescent material. Stated somewhat differently, rather than a material comprising a plurality of particles, as recited in claim 1, the first resin encapsulator 25 is colored (*i.e.*, dyed or pigmented) with a wavelength-converting material. Such material in the context of in *Koike, et al.* is not described as being (and would not be) particulate in nature, but would be mixed in the first resin encapsulator 25. Applicant respectfully submits that one of ordinary skill in the art would not liken fluorescent dye or fluorescent pigment to a plurality of particles, as the Examiner suggests.

In response to this argument, the Final Office Action construes claim 1 using an overly broad definition of “particle” as being “one of the extremely small constituent of matter, as an atom or nucleus,” and asserts that the chemical compound fluorescein, a hydrocarbon molecular substance, is comprised of “particles” within the proffered definition. *See* Final Office Action, p. 5 (quoting www.dictionary.com, entry 2a). Specifically, the Office Action asserts that the individual atoms of the fluoroscein molecule ($C_{20}H_{12}O_5$) disclose the claimed plurality of particles.

However, Applicant respectfully submits that it is unreasonable to construe the individual atoms of the fluoroscein molecule as disclosing a plurality of particles, as recited in claim 1. One of ordinary skill in the art would not construe the dye or pigment as disclosed in *Koike, et al.* at the atomic level to infer that the wavelength-converting material teaches a plurality of particles, particularly in view of the subject Specification. It is well established that, “[d]uring patent examination, the pending claims must be ‘given their broadest reasonable interpretation consistent with the specification.’” *See* MPEP 2111 (emphasis added) (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316, 75 USPQ2d 1321, 1329 (Fed. Cir. 2005)). More particularly, the *Phillips* Court stated as follows:

“The Patent and Trademark Office (“PTO”) determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction “in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364[70 USPQ2d 1827] (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must “conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.” 37 CFR 1.75(d)(1).”

Id. (emphasis added).

When viewed in light of the specification, Applicant respectfully submits that each of the second optical medium elements comprising a plurality of particles does not

refer to the atomic or subatomic level of any material in existence. Indeed, the Specification describes the plurality of particles, as follows:

The light-scattering properties of the second optical media 5 may be achieved, for example, in that they comprise a dispersion of scattering particles such as, for example, hollow globules with a refractive index different from that of the remaining material of the medium 5.

The scattering properties of the second optical media 5 can be optimized to the given dimensioning of the optical waveguide plate and its cavities in a comparatively simple manner through a suitable choice of the size of the particles and of the material from which they are manufactured, i.e. the refractive index thereof, and their number or density in the second optical media 5, so that a desired distribution (homogeneous or otherwise) of the luminous intensity on the light emission surface 4 is achieved.

See Specification, p. 5, line 33 – p. 6, line 8 (emphasis added).

Accordingly, Applicant respectfully submits that there is no mention or even suggestion of atomic or subatomic particles, such as atoms or nuclei, as suggested by the Examiner's definition. In addition, there is no indication (in the Specification or *Koike, et al.*) that such atomic or subatomic particles would scatter light. As such, the rejection thus depends entirely on a construction of the "plurality of particles" that is overly broad and otherwise inconsistent with the Specification. Thus, Applicant respectfully submits that such an interpretation is unreasonable.

For at least the reasons set forth above, Applicant respectfully submits that *Koike, et al.* does not disclose each and every element of claim 1. As stated above, to show anticipation, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. See, e.g., *Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir. 1991). Therefore, Applicant respectfully submits that the rejection of claim 1 under 35 U.S.C. § 102(b) should be withdrawn.

2. Claim 9

Claim 9 depends indirectly from independent claim 1 and recites the following:

...wherein the light-scattering particles are globules with an optical refractive index different from that of the surrounding material.

Consistent with the discussion above, Applicant respectfully submits that fluorescent dye or fluorescent pigment disclosed by *Koike, et al.* clearly does not disclose light-scattering globules. Moreover, although the Final Office Action nominally rejects claim 9, it does not point to any portion of *Koike, et al.* that allegedly discloses light-scattering globules. See Final Office Action, pp. 2-3.

Accordingly, *Koike, et al.* does not disclose each and every element of claim 9, and the Final Office Action does not otherwise establish a *prima facie* case of anticipation. Therefore, Applicant respectfully submits that the rejection of claim 9 under 35 U.S.C. § 102(b) should be withdrawn.

C. Rejection Improper

For at least the reasons set forth above, Applicant respectfully submits that anticipation has not been established because *Koike, et al.* does not disclose each and every element of claim 1 or claim 9, and thus claim 1 and claim 9 are patentable over the applied art. In addition, Applicant respectfully submits that claims 4-8 and 10-12 are patentable over the applied art at least because they depend, directly or indirectly, from claim 1, which has been shown to be allowable, and further in view of their additional subject matter.

II. Rejection under 35 U.S.C. § 103(a)

Claims 3 and 4 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over *Koike, et al.* in view of *Kawano, et al.* Applicant submits that *Kawano, et al.* does not cure the deficiencies of *Koike, et al.* discussed above with respect to claim 1, from which claims 3 and 4 depend. Further, while Applicant does not concede the propriety of the combination of references, because claims 3 and 4 rejected for obviousness depend from claim 1, they are patentable for at least the same reasons discussed above, and in view of their additional subject matter.

8. Conclusion

In view the foregoing, Applicant respectfully requests that the rejections of record be withdrawn, all the pending claims be allowed, and the application to be found in condition for allowance.

Respectfully submitted on behalf of:

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APPENDIX

Claims on Appeal

1. A luminous body comprising:
a housing with a light emission surface and a plurality of light sources arranged in the housing, wherein the housing comprises: at least a first optical medium with a first optical scattering power, into which medium the light of the light sources is coupled; and
a plurality of second optical medium elements with a second optical scattering power disposed in the housing, wherein each of the second optical medium elements comprises a plurality of particles, and each of the second medium elements is disposed over a respective one of the light sources.
2. A luminous body as claimed in claim 1, with at least one layer by means of which the second optical medium is screened off at least substantially against a direct incidence of the light originating from a light source.
3. A luminous body as claimed in claim 2, wherein the layer is a layer that reflects on both sides.
4. A luminous body as claimed in claim 1, wherein the second optical medium is introduced into a region between at least one light source and the light emission surface.
5. A luminous body as claimed in claim 1, wherein the first optical medium is an optical waveguide plate, and the light sources are arranged in at least one cavity of said optical waveguide plate.
6. A luminous body as claimed in claim 5, wherein the scattering power of the second optical medium is chosen such that it compensates at least substantially for the reduction in the flow of light in the first optical medium caused by at least one of the cavities provided in the first optical medium.

7. A luminous body as claimed in claim 5, wherein the second optical medium is introduced into at least one region between at least one cavity and the light emission surface.

8. A luminous body as claimed in claim 1, wherein the second optical medium comprises light-scattering particles.

9. A luminous body as claimed in claim 8, wherein the light-scattering particles are globules with an optical refractive index different from that of the surrounding material.

10. A luminous body as claimed in claim 8, wherein the light-scattering particles are regions created by a material change caused by the action of at least one laser beam.

11. A luminous body as claimed in claim 1, wherein the light propagating in each of the second optical medium elements is at least substantially coupled thereinto from the first optical medium.

12. A luminous body as claimed in claim 1, wherein the scattering power of at least one of the media is selected to influence the flow of light in the housing such that a predefinable brightness distribution of the light over the light emission surface is achieved.

APPENDIX

Evidence (None)

APPENDIX

Related Proceedings (None)